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NOTICE OF ALLOWANCE AND FEE(S) DUE

272 7590 08/05/2008

SCULLY, SCOTT, MURPHY & PRESSER, P.C.
400 GARDEN CITY PLAZA
SUITE 300
GARDEN CITY, NY 11530

EXAMINER	
KOSSON, ROSANNE	
ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 08/05/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,088	12/27/2005	Richard James Lewis	16096	9222

TITLE OF INVENTION: TYPE II CHI-CONOTOXIN PEPTIDES (NORADRENALINE TRANSPORTER INHIBITORS)

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1440	$300	$0	$1740	11/05/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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272 7590 08/05/2008

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,088	12/27/2005	Richard James Lewis	16096	9222

TITLE OF INVENTION: TYPE II CHI-CONOTOXIN PEPTIDES (NORADRENALINE TRANSPORTER INHIBITORS)

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nonprovisional	NO	$1440	$300	$0	$1740	11/05/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
KOSSON, ROSANNE	1652	514-014000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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EXAMINER	
KOSSON, ROSANNE	
ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 08/05/2008

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 43 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 43 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

Notice of Allowability	Application No.	Applicant(s)	
	10/537,088	LEWIS ET AL.	
	Examiner	Art Unit	
	Rosanne Kosson	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *an amendment filed on April 29, 2008*.

2. ☒ The allowed claim(s) is/are *1,5,6,22-24,28,43,45,47,49,55-58 and 60*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 10/10/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

1. The application has been amended as follows.

The specification amended as follows.

Replace the abstract with the attached abstract on a separate sheet of paper.

The claims are amended as follows.

2 – 4. (canceled)
7 – 11. (canceled)
14 – 21. (canceled)

22. (currently amended) The peptide according to claim 1 wherein the Tyr [[of loop 1]] has been replaced with MeY and/or the Leu [[of loop 1]] is replaced with Hle or Nle.

25 – 26. (canceled)
31. (canceled)
33 – 35. (canceled)
37. (canceled)
42. (canceled)
44. (canceled)
46. (canceled)
48. (canceled)
50 – 53. (canceled)

55. (currently amended) The peptide according to claim 1, 5 or 6, wherein Xaa5 is selected from the group consisting of His, Arg, Trp, Nal, and Glu [[and a deletion]].

57. (currently amended) The peptide according to claim 1, 5 or 6, wherein Xaa6 is selected from the group consisting of Hyp, Pro, Ala, Tic, Pip, MeY, DMD, Phe, THZ, Glu, Nle, and Tyr [[and a deletion]].

Authorization for this Examiner's Amendment was given by telephone by Applicants' agent, Ms. Xiaochun Zhu, on June 5, 2008.

2. The following is an examiner's statement of reasons for allowance. The prior art does not teach or suggest the claimed polypeptides, SEQ ID NO:3 and SEQ ID NO:5. As previously discussed, the closest prior art is McIntosh et al. (US 6,767,896 B1) and Olivera et al. (US 2003/0109670 A1). McIntosh et al. disclose compositions comprising the conotoxin polypeptides Mar1 (SEQ ID NOS:2 and 12, mature form and precursor form, respectively) and Q818 (SEQ ID NOS:5 and 14, mature form and precursor form, respectively), which comprise the sequence of Applicants' SEQ ID NO:3- CCGYKLCXXC (see col. 6, lines 57-62; col. 10, line 66, to col. 15, line 54; col. 20, Table 1; and col. 22, Table 2). Mature Mar1 of McIntosh et al. is a version of their SEQ ID NO:2 in which Xaa1 is Y, Xaa2 is K and Xaa3 is hydroxy-P. Instantly claimed SEQ ID NO:5 differs from Mar1 in that the N-terminal amino acid is E, vs. the N of Mar1. But, the claims now recite that Mar1 is excluded from the set of claimed polypeptides, and the reference does not suggest replacing the N with E. As these two amino acids differ in charge, this change to the polypeptide sequence might alter the functional properties of the polypeptide. This change has effects that cannot be predicted. Applicants have explained on the record that the following three polypeptides are identical: MrIA (instant SEQ ID NO:1), Mar1 and Mr1.1.

McIntosh et al. also disclose the polypeptides of their SEQ ID NO:3, which are polypeptides of 12 amino acids that comprise instant SEQ ID NO:3 (see col. 4, lines 1-42). The Mar2 polypeptide, one of the set of polypeptides of SEQ ID NO:3 in which Xaa1 is Y, Xaa2 is K

and Xaa3 is hydroxy-P, is a fragment of Applicants' SEQ ID NO:5 and is instantly claimed SEQ ID NO:5 minus the N-terminal E. Thus Mar1 and Mar2 differ by one amino acid, Mar1 having an extra N at the N terminus.

Mature Q818 of McIntosh et al., is a version of their SEQ ID NO:5 in which Xaa1 is Y, Xaa2 is K and Xaa3 is hydroxy-P. Instantly claimed SEQ ID NO:3 differs from mature Q818 in that mature Q818 has one extra amino acid at the N terminus, an A residue. But, the reference does not suggest adding an A to the N-terminus of the polypeptide of instant SEQ ID NO:3.

As also previously discussed, Olivera et al. (US 2003/0109670 A1) disclose a composition comprising the conotoxin polypeptide Mr1.1 (SEQ ID NOS:345-346), which comprises the sequence of Applicants' SEQ ID NO:3- CCGYKLCXXC (see p. 33 and p. 41, Table 5; and paragraphs 3, 5, 6, 9, 11, 23, 24 and 48-56). Olivera et al. also disclose SEQ ID NOS:352-353, a toxin polypeptide of 12 amino acids that comprises the polypeptide of instant SEQ ID NO:3 (see pp. 33, 147 and 148).

But, the claims have been amended to exclude the polypeptides MrIA (instant SEQ ID NO:1) and Au1.4 , which are disclosed in the prior art. As noted above, Applicants have explained on the record that the following three polypeptides are identical: MrIA, Mar1 and Mr1.1 and that SEQ ID NOS:352-353 of Olivera et al. are Au1.4 and chemical derivatives thereof.

Regarding the added limitation of the disulfide bonding, this limitation does not serve to define the claimed invention over the prior art, because, as previously discussed, McIntosh et al. disclose that all of their χ-conotoxins have the C1 – C4 and C2 – C3 disulfide bonding. The positions of the C's in the amino sequence determine the disulfide linkages and, therefore, the tertiary structure of the peptide (see Example 3, cols. 17-18; and col. 21, line 14, to col. 22, line 11). This disulfide bonding pattern corresponds to that now recited in the instant claims.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is (571)272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nashaat Nashed can be reached on 571-272-0934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rosanne Kosson
Examiner, Art Unit 1652

rk/2008-06-17

/Rebecca E. Prouty/
Primary Examiner,
Art Unit 1652

Abstract

An isolated, synthetic or recombinant X-conotoxin peptide having the ability to inhibit neuronal amine transporter comprising the following sequence of amino acids: Cys Cys Gly Tyr Lys Leu Cys Xaa5 Xaa6 Cys, SEQ ID NO:3, where Xaa5 and Xaa6 are independently absent or represent any amino acid residue except Cys; or a sequence in which Gly, Tyr, Lys or Leu are subject to conservative amino acid substitution or side chain modification with the proviso that the peptide is not MrIA, MrIB, Mar2, CMrVIA, Bn1.5, Mr1.3 or Au1.4; or a salt, ester, amide, prodrug or cyclised derivative thereof.